

# INTERACTIVE WATER EFFECTS USING TEXTURE COORDINATE SHIFTING

## ABSTRACT OF THE DISCLOSURE

5 A system and process for adding a photorealistic rendering of a body of  
water to a virtual 3D scene or image and creating a video therefrom having  
interactive water effects. A region of water is added to an image by adding an  
area depicting the original scene as it would appear if reflected by still body of  
water. Then, the appearance of the added water region is distorted over a series  
10 of image frames in such a way as to simulate how the reflected scene would look  
if the surface of the water were in motion. The water can have dynamic waves  
and the user can interact with the water in numbers of ways, including generating  
ripples on the water surface and creating rain. In addition, these effects can be  
achieved at full screen resolution with the use of the latest graphics hardware by  
15 employing a texture shifting technique.